

<b>Module Code</b>	<b>EEU22E10</b>
<b>Module Name</b>	<b>ENGINEERING DESIGN IV: PROJECT</b>
<b>ECTS Weighting<sup>2</sup></b>	10 ECTS
<b>Semester taught</b>	Semester 2
<b>Module Coordinator/s</b>	Prof. Harun Siljak, Prof. Glenn Strong
<b><u>Module Learning Outcomes</u> with reference to the <u>Graduate Attributes</u> and how they are developed in discipline</b>	<p>On successful completion of this module, students should be able to:</p> <ol style="list-style-type: none"> <li>1. Apply the engineering process of problemsolving.</li> <li>2. Design a simple autonomous vehicle to meet a well-defined specification.</li> <li>3. Clearly demonstrate group working, including task sub-division and integration of individual contributions from the team.</li> <li>4. Plan a project, meeting all interim deliverables.</li> <li>5. Implement project tracking and code version control.</li> <li>6. Apply knowledge of the health and safety requirements of electronic circuit board construction.</li> <li>7. Recognise issues to be addressed in a combined hardware and software system design.</li> <li>8. Develop skills in the areas of quantitative analysis, scientific reasoning and communication.</li> <li>9. Develop practical experimental skills in electronic circuit testing.</li> <li>10. Develop practical experimental skills in software system testing.</li> <li>11. Explore and defend their design decisions, critique their own design.</li> <li>12. Evaluate the outcome of their achievements given the original specification.</li> <li>13. Demonstrate organised and concise report writingskills.</li> </ol> <p><b>Graduate Attributes: levels of attainment</b>  To act responsibly - Introduced  To think independently - Introduced  To develop continuously - Introduced  To communicate effectively - Introduced</p>

<sup>1</sup> [An Introduction to Module Design](#) from AISHE provides a great deal of information on designing and re-designing modules.

<sup>2</sup> [TEP Glossary](#)

<b>Module Content</b>	<p>The objectives of this module are:</p> <ol style="list-style-type: none"> <li>1. To apply basic principles of science and engineering to Conceive, Design, Implement and Operate (CDIO) an autonomous vehicle;</li> <li>2. To introduce group working and project planning;</li> <li>3. To introduce the principles of circuit construction and the health and safety issues associated with electronic circuit construction and the adoption of test procedures;</li> <li>4. To introduce the principles of software systems design including user interface design and control software for wireless communications;</li> <li>5. To analyse the design and optimise it with respect to manufacturability and testing;</li> <li>6. To introduce the requirements of project documentation, circuit drawings and software documentation;</li> <li>7. To introduce project reporting and presentation.</li> </ol>							
<b>Teaching and Learning Methods</b>	<p>The module is taught using a combination of lectures, demonstration laboratories and through project sessions at which advisors are present. As a 10 ECTS course, the average individual student effort should be 200-250 hours spread over the semester. 55 of these will be actual contact hours. Thus all students, as individuals and as groups, are also expected to undertake extensive independent research and development work on the project.</p>							
<b>Assessment Details<sup>3</sup></b> <b>Please include the following:</b> <ul style="list-style-type: none"> <li>• <b>Assessment Component</b></li> <li>• <b>Assessment description</b></li> <li>• <b>Learning Outcome(s) addressed</b></li> <li>• <b>% of total</b></li> <li>• <b>Assessment due date</b></li> </ul>	<b>Assessment Component</b>	<b>Assessment Description</b>	<b>LO Addressed</b>	<b>% of total</b>	<b>Week due</b>			
	Continuous Assessment	combination of demos, interviews, tests and reports	all	100%	Throughout the semester			
<b>Reassessment Requirements</b>								
<b>Contact Hours and Indicative Student Workload<sup>3</sup></b>	<table border="1" style="width: 100%;"> <tr> <td><b>Contact hours: 50</b></td> </tr> <tr> <td><b>Independent Study (preparation for course and review of materials): 50</b></td> </tr> <tr> <td><b>Independent Study (preparation for assessment, incl. completion of assessment): 150</b></td> </tr> </table>					<b>Contact hours: 50</b>	<b>Independent Study (preparation for course and review of materials): 50</b>	<b>Independent Study (preparation for assessment, incl. completion of assessment): 150</b>
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<sup>3</sup> [TEP Guidelines on Workload and Assessment](#)

**Recommended Reading List**

**Module Pre-requisite**

**Module Co-requisite**

**Module Website**

**Are other Schools/Departments  
involved in the delivery of this module?  
If yes, please provide details.**

**Module Approval Date**

**Approved by**

**Academic Start Year**

**Academic Year of Date**

September 2024